

Section II. (REMARKS)

The claims pending herein are 1, 2, 4-7, 10, 14, 15, 17-21, 53-57 and 59.

Request for Continued Examination

A Request for Continued Examination under 37 CFR §1.114 is included herewith.

Amendment to the Claims

Claims 1 and 24 have been amended to excise the species “thiazole.” This does not affect the thrust of these claims and no new search is necessitated.

Allowable Subject Matter

In the May 6, 2008 Office Action, the Examiner objected to claims 7, formula G only, and claim 57, indicating that they would be allowable if each were rewritten in independent form. Applicants acknowledge same.

Request for Rejoinder Reminder

Applicants respectfully request rejoinder of method claims 24-31, 33-36, 39, 43-50, and 58 upon allowance of the pending composition claims 1-2, 4-7, 10, 14, 15, 17-21, 53-57, and 59.¹ Towards that end, withdrawn method claim 24 has been amended in a manner consistent with pending composition claim 1.

Double Patenting Rejection Under the Judicially Created Doctrine of Obviousness-Type Double Patenting

In the May 6, 2008 Office Action, the Examiner rejected claims 1, 2, 4-7, 9-10, 14-15, 17-21 and 53-57 under the judicially created doctrine of obviousness-type double patenting. Specifically, the Examiner stated that said claims are:

¹ Rejoinder was previously requested in the response to the April 18, 2005 Office Action, filed April 27, 2005.

“unpatentable over claims 1-7, 9-17, 21-22 and 33-48 as amended on 17 August 2007 of co-pending application No. 10/389,214 (and its teachings and suggestions in the specification on at least paragraphs 9, 12, 13, 17, 18, 21, 23, Examples 2, 4 and 5). Applicants, assignee and their counsel may and should disagree, urge and state on and for the record that each of the claims as originally filed is self sufficient. There has not been and will not be relied on any embodiment and any application for any purpose) considered in view of En et al (2004/0134682).” (see the May 6, 2008 Office Action, page 4).

Although the punctuation of the foregoing paragraph, which was copied verbatim, is confusing, it appears as though En et al. is being used as a secondary reference in the judicially created obviousness-type double patenting rejection.

As a matter of law, the test for obviousness-type double patenting is whether the claimed invention of the subject application would have been obvious from the subject matter of the claims in the cited reference, in light of the prior art. See, *In re Longi*, 225 U.S.P.Q. 645 (Fed. Cir. 1985). Further, the initial burden of establishing a *prima facie* case of obviousness is always on the Examiner. *In re Oetiker*, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992).

Claim 1 of the present application recites, *inter alia*:

“A cleaning composition comprising a quaternary base, at least one alkali or alkaline earth base, and at least one additional component selected from the group consisting of a chelator, an oxirane species, and combinations thereof, wherein said chelator comprises a species selected from the group consisting of: 1-amino-1,2,4-triazole; 1-amino-1,2,3-triazole; 1-amino-5-methyl-1,2,3-triazole; 3-mercapto-1,2,4-triazole; 3-isopropyl-1,2,4-triazole; naphthotriazole; 2-mercaptobenzimidazole; 5-aminotetrazole; 5-amino-1,3,4-thiadiazole-2-thiol; 2,4-diamino-6-methyl-1,3,5-triazine; triazine; methyltetrazole; 1,3-dimethyl-2-imidazolidinone; 1,5-pentamethylenetetrazole; 1-phenyl-5-mercaptotetrazole; diaminomethyltriazine; imidazoline thione; 4-methyl-4H-1,2,4-triazole-3-thiol; 5-amino-1,3,4-thiadiazole-2-thiol; tritolyl phosphate; indiazole; adenine; salicylamide; iminodiacetic acid; benzoguanamine; thiocyanuric acid; anthranilic acid; 3-mercaptopropanol; and combinations thereof . . .”

Claim 17 of co-pending application No. 10/389,214 (hereinafter the '214 application) recites:

“The cleaning solution of claim 7 wherein said chelator is one of a triazole, a thiazole, a tetrazole, an imidazole, a phosphate, a thiol, an azine, a glycerol, an amino acid, a carboxylic acid, an alcohol, an amide, and a quinoline.”

The Examiner is respectfully reminded that the test for obviousness-type double patenting is whether the claimed invention of the subject application would have been obvious from the subject matter of the claims in the cited reference, in light of the prior art. In the present case, given the large number of triazoles, thiazoles, tetrazoles, imidazoles, phosphates, thiols, azines, glycerols, amino acids, carboxylic acids, alcohols, amides, and quinolines (from claim 17 of the '214 application) that are known (and unknown) in the art, there is no motivation, teaching or suggestion for one skilled in the art to come up with the list enumerated in applicants' claim 1, specifically “1-amino-1,2,4-triazole; 1-amino-1,2,3-triazole; 1-amino-5-methyl-1,2,3-triazole; 3-mercapto-1,2,4-triazole; 3-isopropyl-1,2,4-triazole; naphthotriazole; 2-mercaptobenzimidazole; 5-aminotetrazole; 5-amino-1,3,4-thiadiazole-2-thiol; 2,4-diamino-6-methyl-1,3,5-triazine; triazine; methyltetrazole; 1,3-dimethyl-2-imidazolidinone; 1,5-pentamethylenetetrazole; 1-phenyl-5-mercaptotetrazole; diaminomethyltriazine; imidazoline thione; 4-methyl-4H-1,2,4-triazole-3-thiol; 5-amino-1,3,4-thiadiazole-2-thiol; tritoyl phosphate; indiazole; adenine; salicylamide; iminodiacetic acid; benzoguanamine; thiocyanuric acid; anthranilic acid; 3-mercaptopropanol; and combinations thereof.”

En et al. does not cure this deficiency in any way. Although some azoles are discussed in En et al., they are discussed in reference to copper-azole complexes and not are recited in applicants' claim 1.

If the Examiner disagrees with this, it is the Examiner's burden to provide a reasoned argument why it would be obvious for one skilled in the art to come up with applicants' presently pending claims in view of at least the claims of the '214 application.

In the meantime, applicants respectfully request withdrawal of the rejection of claims 1, 2, 4-7, 9-10, 14-15, 17-21 and 53-57 under the judicially created doctrine of obviousness-type double patenting.

Rejection of Claims and Traversal Thereof

In the May 6, 2008 Office Action:

claims 1, 2, 5, 10, 15, 17, 18, 19, 21, 53 and 56 were rejected under 35 U.S.C. 103(a) as being

unpatentable over Pasch (U.S. Patent No. 6,117,795) in view of Ward et al. (U.S. Patent No. 5,139,607) and Hsu; and

claims 1, 2, 5, 10, 15, 17, 18, 19, 21, 53 and 56 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al. in view of Pasch.

These rejections are traversed and reconsideration of the patentability of the pending claims is requested in light of the following remarks.

Pasch relates to a cleaning process for removing etch-residue comprising metal compounds from an integrated circuit substrate. Referring to Figure 1 of Pasch, reproduced below for ease of reference, Pasch teaches the use of a post-etch cleaning solution for “removing the etch-residue that accumulates or is deposited on the dielectric layer side-walls of the via hole during etching” (see, Pasch, col. 4, lines 62-64).

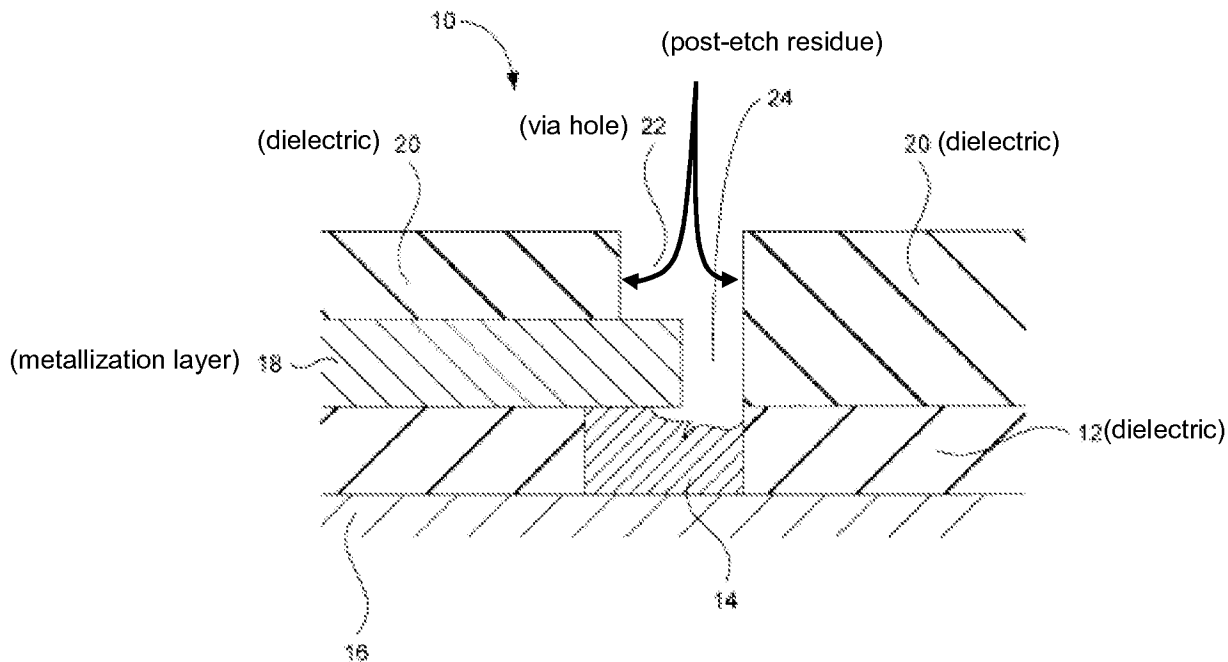


FIGURE 1

Clearly, the post-etch cleaning solution should not damage the dielectric sidewalls or otherwise said solution would actually qualify as an etching composition and the via hole would be obliterated.

Ward relates to an alkaline resist stripping composition. Ward recites that:

“[t]he compositions of the invention are particularly useful to remove dielectric components, i.e. silanes and siloxanes which may be found in some resists.” (see, Ward, col. 5, lines 10-12)

It is well established as a matter of law that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The proposed combination of Pasch and Ward, or Ward and Pasch, would render Pasch unsatisfactory for its intended purposes. Specifically, Ward recites that their composition is “particularly useful to remove dielectric components,” while Pasch requires the removal of post-etch residue from dielectric sidewalls, impliedly without etching the dielectric materials (to reiterate, if the Pasch composition etched the dielectric, the via hole would be destroyed). Why would one skilled in the art considering Pasch, where no additional dielectric material should be removed, be motivated to combine the Pasch composition with the Ward composition, which is “particularly useful to remove dielectric components?” Clearly they would not because Pasch would be rendered unsatisfactory for its intended purpose. As such, a *prima facie* case of obviousness does not exist.

The Examiner is also respectfully reminded that Pasch and Ward must be considered as a whole. *W.L. Gore & Associates, Inc., v. Garlock, Inc.*, 220 U.S.P.Q. 303 (Fed. Cir. 1993), *cert. denied*, 469 U.S. 851 (1984). The Examiner is not allowed to cherry-pick either reference in an attempt to establish a *prima facie* case of obviousness.

In conclusion, there is no motivation, teaching or suggestion, nor any other reason to combine Pasch and Ward. Withdrawal of the obviousness rejection in view of Pasch and Ward, as well as Ward and Pasch, is respectfully requested.

Petition for Extension of Time/Fees Payable

Applicants hereby petition for a one (1) month extension of time, extending the deadline for responding to the May 6, 2008 Office Action from August 6, 2008 to September 8, 2008 (September 6, 2008 is a Saturday). The fee of \$120.00 specified in 37 CFR §1.17(a)(1) for such one (1) month extension is hereby enclosed.

The fee of \$810.00 under 37 CFR 1.17(e) for the Request for Continued Examination is being paid using Electronic Funds Transfer.

The total fee of \$930.00 is being paid by Electronic Funds Transfer. Authorization is hereby given to charge any deficiency in applicable fees for this response to Deposit Account No. 13-4365 of Moore & Van Allen PLLC.

Conclusion

Claims 1, 2, 4-7, 10, 14, 15, 17-21, 53-57 and 59 are in form and condition for allowance. If any additional issues remain, the Examiner is requested to contact the undersigned attorney at (919) 286-8090 to discuss same.

Respectfully submitted,

MOORE & VAN ALLEN PLLC



Date: September 8, 2008

By: _____

Tristan Anne Fuierer
Registration No. 52,926
Moore & Van Allen PLLC
430 Davis Drive, Suite 500
Morrisville, NC 27560-6832
Telephone: (919) 286-8000
Facsimile: (919) 286-8199